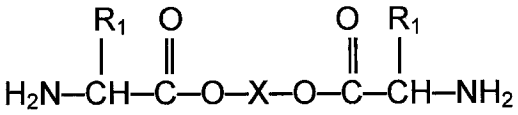
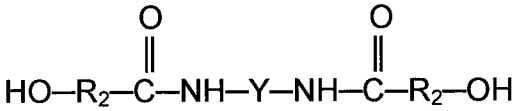
## CLAIMS

1. (PREVIOUSLY PRESENTED) A medical article comprising an implantable substrate having a coating, the coating including a polymeric product of a reaction between a first reagent, a second reagent, and a third reagent, wherein:

(a) the first reagent is selected from a group consisting of compounds having formulae (1), (2), (3), and (4):



(1)



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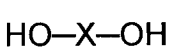

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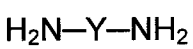
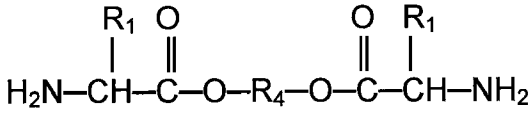


(4)

(b) the second reagent is selected from a group consisting of compounds having formulae (5), (6), (7), and (8):



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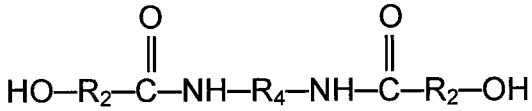

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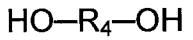

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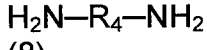
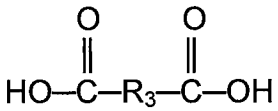


(8)

(c) the third reagent is a dicarboxylic acid having the formula (9):



(9)

wherein:

$R_1$ is hydrogen, methyl, *iso*-propyl, *sec*-butyl; *iso*-butyl, or benzyl group;

$R_2$ is methylene, methylmethylene, *n*-propylene, *iso*-propylene, ethylmethylene, *n*-butylene, *iso*-butylene, *sec*-butylene, or *n*-amylene group;

$R_3$ is a straight chained or branched aliphatic alkylene group $C_nH_{2n}$, wherein n is an integer between 2 and 12;

$R_4$ is a moiety derived from a compound selected from a group consisting of poly(ethylene glycol), poly(propylene glycol), random poly(ethylene glycol-co-propylene glycol), poly(ethylene glycol)-block-poly(propylene glycol), O,O'-bis-2-aminopropyl-(poly(propylene glycol)-b-poly(ethylene glycol-b-poly(propylene glycol) (ED 600) and poly(vinyl pyrrolidone);

X is a straight chained or branched aliphatic alkylene group $C_nH_{2n}$, wherein n is an integer between 2 and 12; and

Y is a straight chained or branched aliphatic alkylene group $C_nH_{2n}$, wherein n is 1, 2, or 5.

2. (ORIGINAL) The medical article of Claim 1, wherein the implantable substrate is a stent.

3. (ORIGINAL) The medical article of Claim 1, wherein the compound of formula (1) is a diol-diamine, the diol-diamine is a product of condensation of an amino acid and a diol.

4. (ORIGINAL) The medical article of Claim 3, wherein the amino acid has the formula (10):

$H_2N–CHR_1–COOH.$ (10)

5. (ORIGINAL) The medical article of Claim 3, wherein the amino acid is selected from a group consisting of glycine, alanine, valine, isoleucine, leucine, and phenyl alanine.

6. (ORIGINAL) The medical article of Claim 3, wherein a diol is selected from a group consisting of ethylene glycol, 1,3-propanediol, 1,4-butane diol, 1,5-pentanediol, 1,6-hexanediol, 1,7-heptanediol, 1,8-octanediol, 1,9-nonanediol, 1,10-decanediol, 1,11-undecanediol, and 1,12-dodecanediol.

7. (WITHDRAWN) The medical article of Claim 1, wherein the compound of formula (2) is an amidediol, the amidediol is a product of condensation of a hydroxy acid and a diamine.

8. (WITHDRAWN) The medical article of Claim 7, wherein the hydroxy acid has the formula (11):

$HO–R_2–COOH.$ (11)

9. (WITHDRAWN) The medical article of Claim 7, wherein the hydroxy acid is selected from a group consisting of glycolic acid, lactic acid, β-hydroxybutyric acid, α-hydroxyvaleric acid, and ε–hydroxycaproic acid.

10. (WITHDRAWN) The medical article of Claim 7, wherein the diamine is selected from a group consisting of putrescine, 1,2-ethanediamine, and cadavarene.

11. (WITHDRAWN) The medical article of Claim 1, wherein the compound of formula (3) is selected from a group consisting of ethylene glycol, 1,3-propanediol, 1,4-butane diol, 1,5-pentanediol, 1,6-hexanediol, 1,7-heptanediol, 1,8-octanediol, 1,9-nonanediol, 1,10-decanediol, 1,11-undecanediol, and 1,12-dodecanediol.

12. (WITHDRAWN) The medical article of Claim 1, wherein the compound of formula (4) is selected from a group consisting of putrescine, 1,2-ethanediamine, and cadavarene.

13. (ORIGINAL) The medical article of Claim 1, wherein the compound of formula (5) is a PEG-diester-diamine conjugate, the conjugate is a product of condensation of an amino acid and poly(ethylene glycol).

14. (ORIGINAL) The medical article of Claim 13, wherein the amino acid has the formula (10):

$$H_2N—CHR_1—COOH. \quad (10)$$

15. (ORIGINAL) The medical article of Claim 13, wherein the amino acid is selected from a group consisting of glycine, alanine, valine, isoleucine, leucine, phenyl alanine, tyrosine, serine, and glutamic acid.

16. (WITHDRAWN) The medical article of Claim 1, wherein the compound of formula (6) is a PEG-amidediol conjugate, the conjugate is a product of condensation of a hydroxy acid and PEG-diamine.

17. (WITHDRAWN) The medical article of Claim 16, wherein the hydroxy acid has the formula (11):

$HO–R_2–COOH.$ (11)

18. (WITHDRAWN) The medical article of Claim 17, wherein the hydroxy acid is selected from a group consisting of glycolic acid, lactic acid, β-hydroxybutyric acid, α-hydroxyvaleric acid, and ε–hydroxycaproic acid.

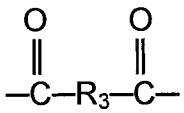
19. (PREVIOUSLY PRESENTED) A medical article comprising an implantable substrate having a coating, the coating including a copolymer having a general formula (12) or (13):

$$–[M–P]_m–[M–Q]_n– \quad (12)$$

$$–[M_1–P]_p– \quad (13)$$

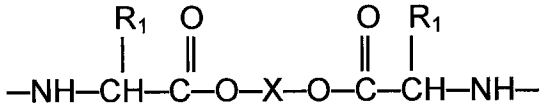
wherein:

M is a moiety represented by the structure having the formula (14)



(14)

P is a moiety selected from a group consisting of structures having the formulae (15), (16), (17), and (18):



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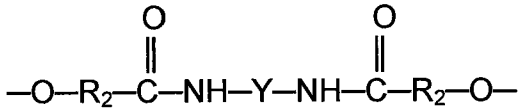

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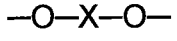

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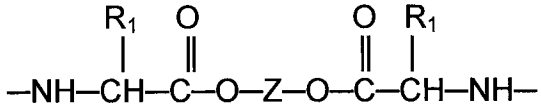
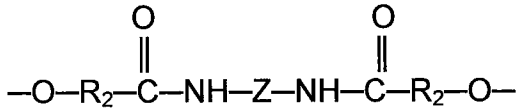


(18)

Q is a moiety selected from a group consisting of structures having the formulae (19), (20), and (21)



(19)



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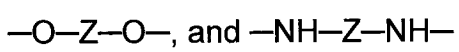
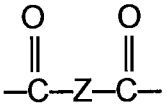


(21)

$M_1$ is a moiety represented by the structure having the formula (22):



(22)

$R_1$ is hydrogen, methyl, *iso*-propyl, *sec*-butyl; *iso*-butyl, or benzyl group;

$R_2$ is methylene, methylmethylene, *n*-propylene, *iso*-propylene, ethylmethylene, *n*-butylene, *iso*-butylene, *sec*-butylene, or *n*-amylene group;

$R_3$ is a straight chained or branched aliphatic alkylene group $C_nH_{2n}$, wherein n is an integer between 2 and 12;

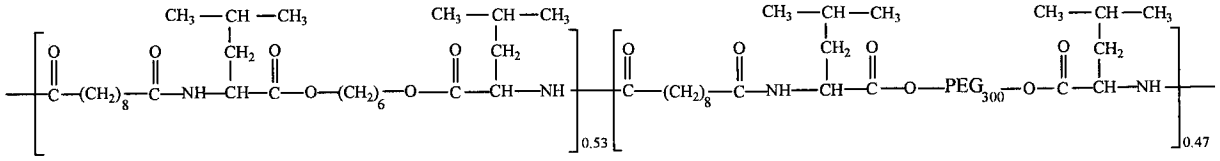
X is a straight chained or branched aliphatic alkylene group $C_nH_{2n}$, wherein n is an integer between 2 and 12;

Y is a straight chained or branched aliphatic alkylene group $C_nH_{2n}$, wherein n is 1, 2, or 5;

Z is a moiety derived from a compound selected from a group consisting of poly(ethylene glycol), poly(propylene glycol), random poly(ethylene glycol-co-propylene glycol), poly(ethylene glycol)-block-poly(propylene glycol), O,O'-bis-2-aminopropyl-(poly(propylene glycol)-b-poly(ethylene glycol-b-poly(propylene glycol) (ED 600) and poly(vinyl pyrrolidone; and

m, n, and p are integers where the value of m is between 5 and 1,800, the value of n is between 1 and 800 and the value of p is between 4 and 1,500.

20. (ORIGINAL) The medical article of Claim 19, wherein the polymer is selected from a group consisting of copolymers of formulae (23), (24), (25), (26), (27), (28), (29), (30), (31), (32), (33), (34), (35), (36), (37), (38), (39), (40), (41), (42), and (43):



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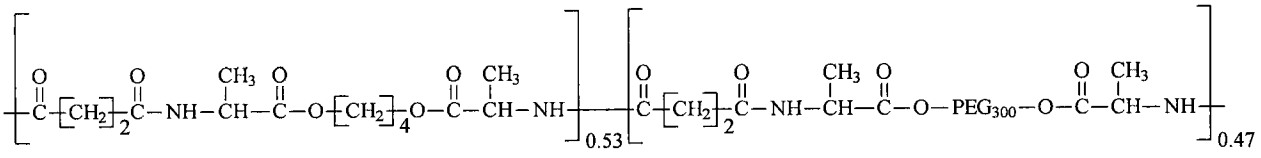

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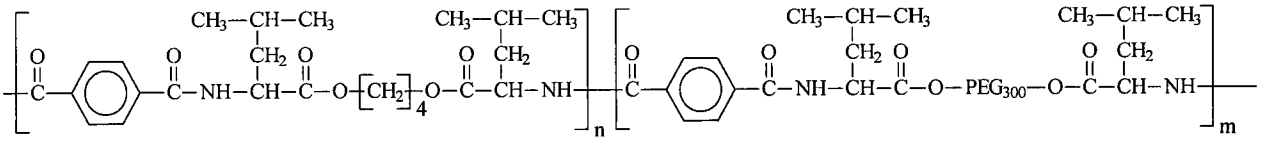

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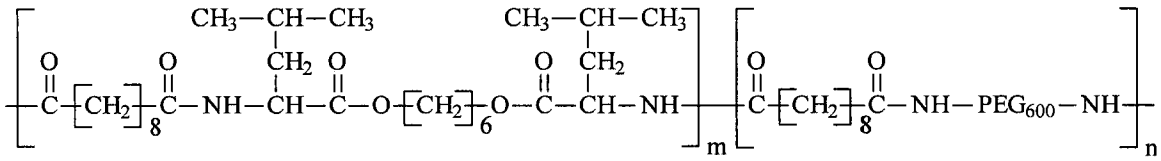

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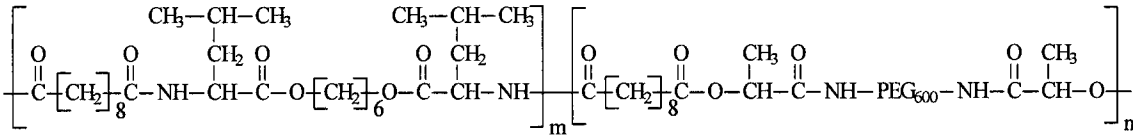

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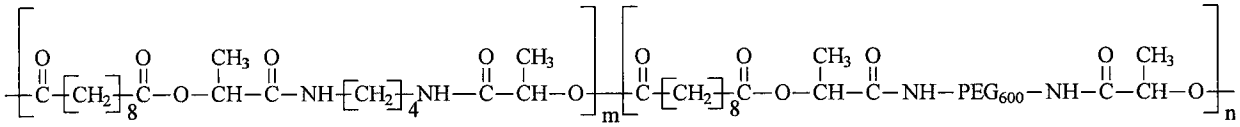

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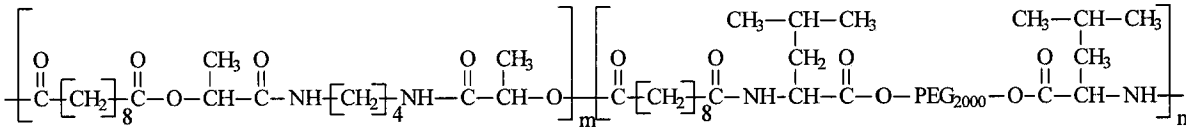

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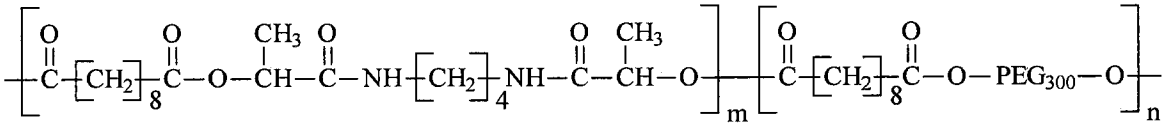

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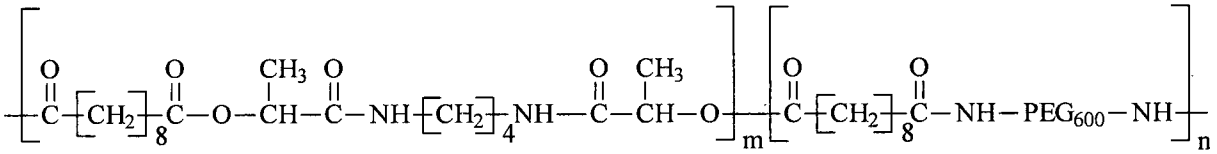

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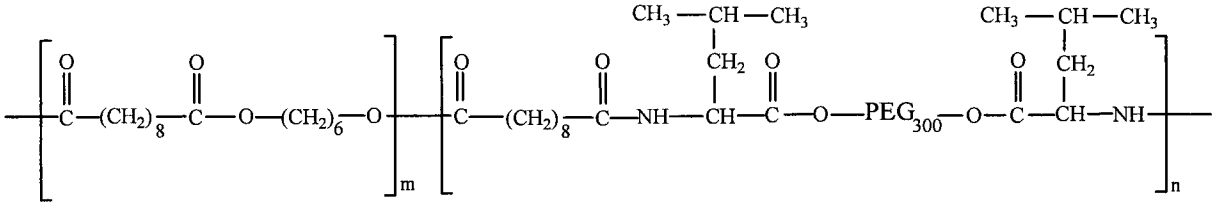

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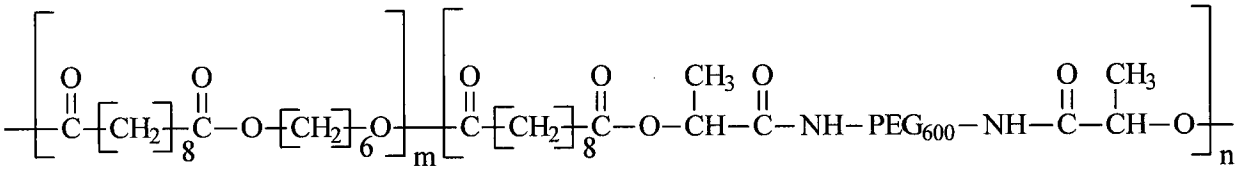

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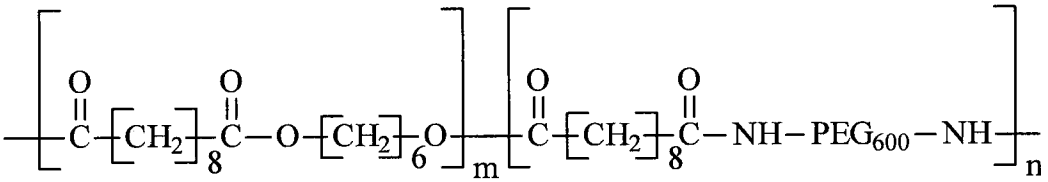

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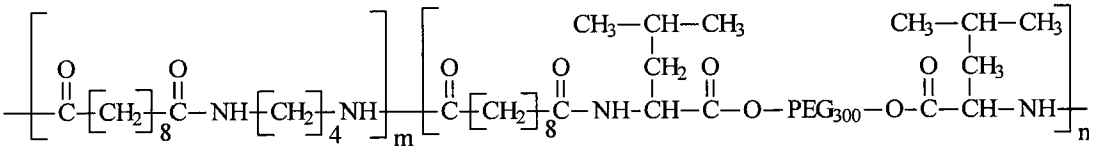

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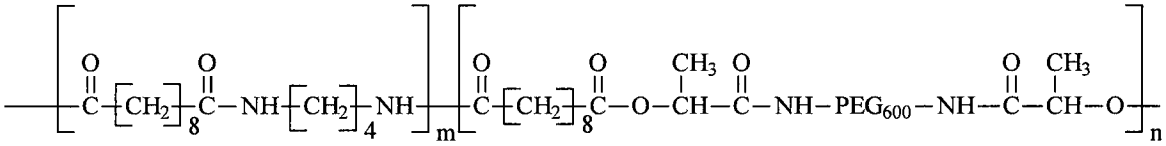

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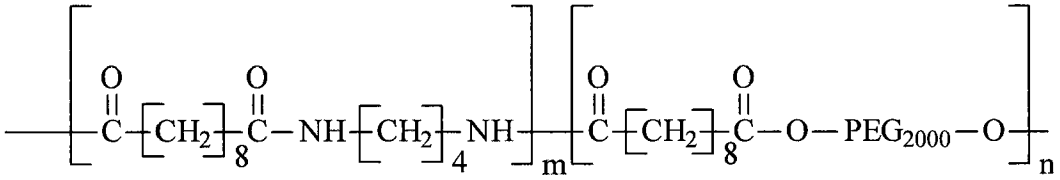

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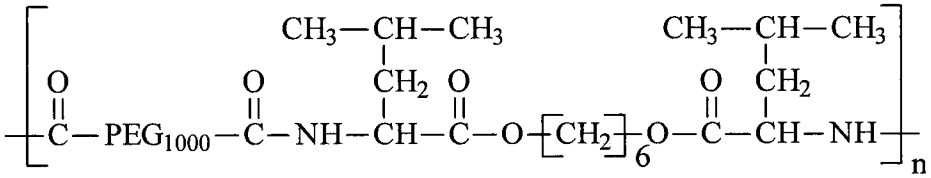

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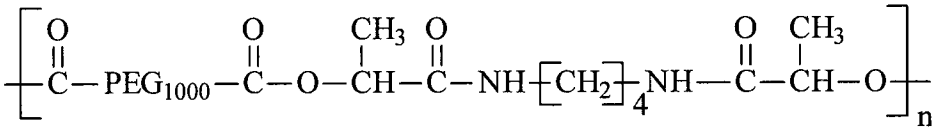

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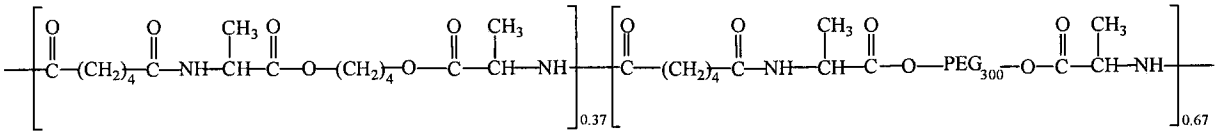

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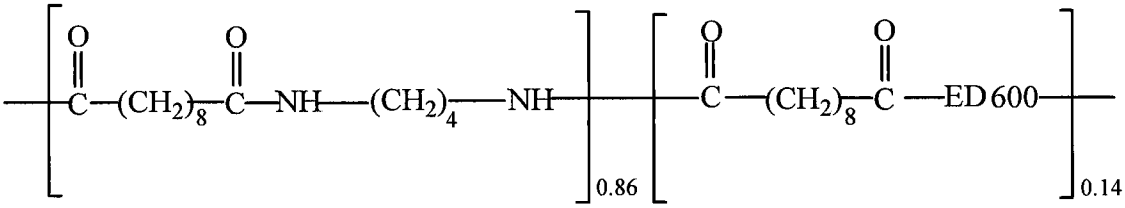

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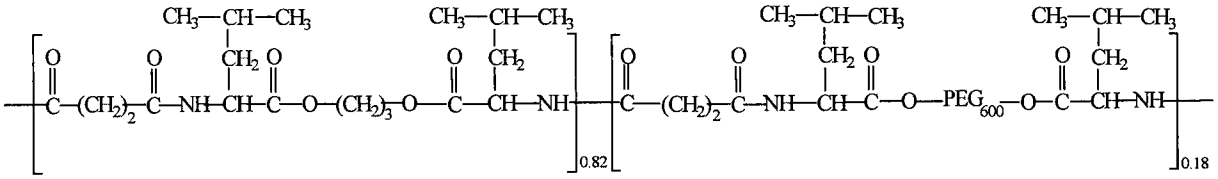

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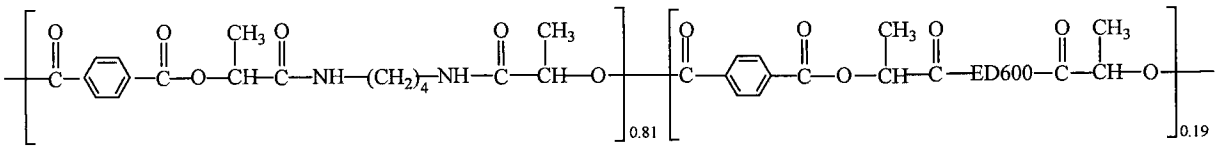
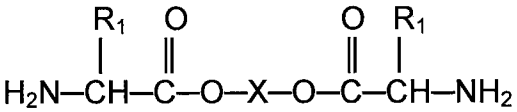


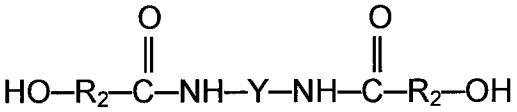
(43)

21. (PREVIOUSLY PRESENTED) A method for fabricating a medical article, the method including synthesizing a copolymer and forming a coating based on the copolymer on at least a portion of an implantable substrate, the synthesizing of the copolymer including reacting a first reagent with a second reagent and with a third reagent, wherein:

(a) the first reagent is selected from a group consisting of compounds having formulae (1), (2), (3), and (4):



(1)



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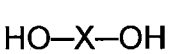

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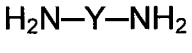
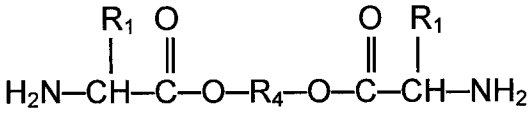


(4)

(b) the second reagent is selected from a group consisting of compounds having formulae (5), (6), (7), and (8):



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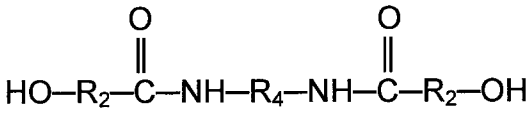

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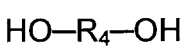

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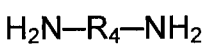
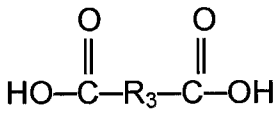


(8)

(c) the third reagent is a dicarboxylic acid having the formula (9):



(9)

wherein:

$R_1$ is hydrogen, methyl, *iso*-propyl, *sec*-butyl; *iso*-butyl, or benzyl group;

$R_2$ is methylene, methylmethylene, *n*-propylene, *iso*-propylene, ethylmethylene, *n*-butylene, *iso*-butylene, *sec*-butylene, or *n*-amylene group;

$R_3$ is a straight chained or branched aliphatic alkylene group $C_nH_{2n}$, wherein n is an integer between 2 and 12;

$R_4$ is a moiety derived from a compound selected from a group consisting of poly(ethylene glycol), poly(propylene glycol), random poly(ethylene glycol-co-propylene glycol), poly(ethylene glycol)-block-poly(propylene glycol), O,O'-bis-2-aminopropyl-(poly(propylene glycol)-b-poly(ethylene glycol-b-poly(propylene glycol) (ED 600) and poly(vinyl pyrrolidone);

X is a straight chained or branched aliphatic alkylene group $C_nH_{2n}$, wherein n is an integer between 2 and 12;

Y is a straight chained or branched aliphatic alkylene group $C_nH_{2n}$, wherein n is 1, 2, or 5.

22. (ORIGINAL) The method of Claim 21, wherein the implantable substrate is a stent.

23. (ORIGINAL) The method of Claim 21, wherein the molar ratio between the first reagent, the second reagent, and the third reagent is about 1:1:2.

24. (ORIGINAL) The method of Claim 21, wherein the compound of formula (1) is a diol-diamine, the diol-diamine is a product of condensation of an amino acid and a diol.

25. (PREVIOUSLY PRESENTED) The method of Claim 24, wherein the amino acid has the formula (10):

$H_2N—CHR_1—COOH$. (10)

26. (ORIGINAL) The method of Claim 24, wherein the amino acid is selected from a group consisting of glycine, alanine, valine, isoleucine, leucine, and phenyl alanine.

27. (ORIGINAL) The method of Claim 24, wherein a diol is selected from a group consisting of ethylene glycol, 1,3-propanediol, 1,4-butane diol, 1,5-pentanediol, 1,6-hexanediol, 1,7-heptanediol, 1,8-octanediol, 1,9-nonanediol, 1,10-decanediol, 1,11-undecanediol, and 1,12-dodecanediol.

28. (WITHDRAWN) The method of Claim 21, wherein the compound of formula (2) is an amidediol, the amidediol is a product of condensation of a hydroxy acid and a diamine.

29. (WITHDRAWN) The method article of Claim 28, wherein the hydroxy acid has the formula (11):

$$HO{-}R_2{-}COOH. \qquad (11)$$

30. (WITHDRAWN) The method of Claim 28, wherein the hydroxy acid is selected from a group consisting of glycolic acid, lactic acid, β-hydroxybutyric acid, α-hydroxyvaleric acid, and ε–hydroxycaproic acid.

31. (WITHDRAWN) The method of Claim 28, wherein the diamine is selected from a group consisting of putrescine, 1,2-ethanediamine, and cadavarene.

32. (WITHDRAWN) The method of Claim 21, wherein the compound of formula (3) is selected from a group consisting of ethylene glycol, 1,3-propanediol, 1,4-butane

diol, 1,5-pentanediol, 1,6-hexanediol, 1,7-heptanediol, 1,8-octanediol, 1,9-nonanediol, 1,10-decanediol, 1,11-undecanediol, and 1,12-dodecanediol.

33. (WITHDRAWN) The method of Claim 21, wherein the compound of formula (4) is selected from a group consisting of putrescine, 1,2-ethanediamine, and cadavarene.

34. (ORIGINAL) The method of Claim 21, wherein the compound of formula (5) is a PEG-diester-diamine conjugate, the conjugate is a product of condensation of an amino acid and poly(ethylene glycol).

35. (PREVIOUSLY PRESENTED) The method of Claim 34, wherein the amino acid has the formula (10):

$H_2N$—$CHR_1$—COOH. (10)

36. (PREVIOUSLY PRESENTED) The method of Claim 34, wherein the amino acid is selected from a group consisting of glycine, alanine, valine, isoleucine, leucine, phenyl alanine, tyrosine, serine, and glutamic acid.

37. (WITHDRAWN) The method of Claim 21, wherein the compound of formula (6) is a PEG-amidediol conjugate, the conjugate is a product of condensation of a hydroxy acid and PEG-diamine.

38. (WITHDRAWN) The method of Claim 37, wherein the hydroxy acid has the formula (11):

HO—$R_2$—COOH. (11)

39. (WITHDRAWN) The method of Claim 37, wherein the hydroxy acid is selected from a group consisting of glycolic acid, lactic acid, β-hydroxybutyric acid, α-hydroxyvaleric acid, and ε–hydroxycaproic acid.

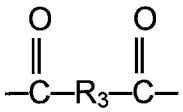
40. (PREVIOUSLY PRESENTED) A method for fabricating a medical article, the method including synthesizing a copolymer and forming a coating based on the copolymer on at least a portion of an implantable substrate, wherein the copolymer has a general formula (12) or (13):

$$-[M-P]_m-[M-Q]_n- \quad (12)$$

$$-[M_1-P]_p- \quad (13)$$

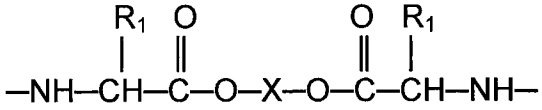
wherein:

M is a moiety represented by the structure having the formula (14)



(14)

P is a moiety selected from a group consisting of structures having the formulae (15), (16), (17), and (18):



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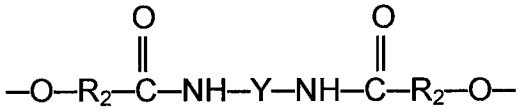

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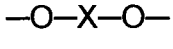
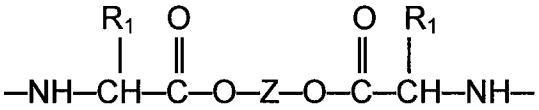


(17)

—NH—Y—NH— (18)

Q is a moiety selected from a group consisting of structures having the formulae (19), (20), and (21)



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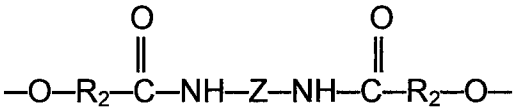
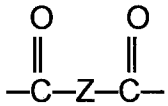


(20)

—O—Z—O—, and —NH—Z—NH— (21)

$M_1$ is a moiety represented by the structure having the formula (22):



(22)

$R_1$ is hydrogen, methyl, *iso*-propyl, *sec*-butyl; *iso*-butyl, or benzyl group;

$R_2$ is methylene, methylmethylene, *n*-propylene, *iso*-propylene, ethylmethylene, *n*-butylene, *iso*-butylene, *sec*-butylene, or *n*-amylene group;

$R_3$ is a straight chained or branched aliphatic alkylene group $C_nH_{2n}$, wherein n is an integer between 2 and 12;

X is a straight chained or branched aliphatic alkylene group $C_nH_{2n}$, wherein n is an integer between 2 and 12;

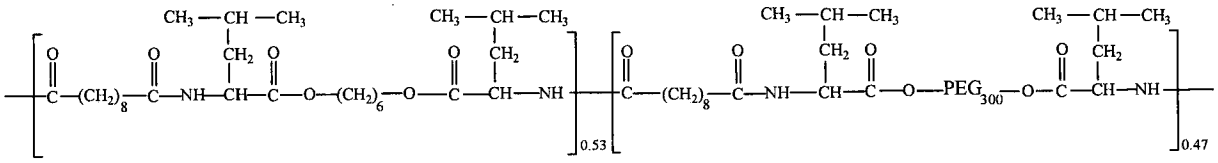
Y is a straight chained or branched aliphatic alkylene group $C_nH_{2n}$, wherein n is 1, 2, or 5; and

Z is a moiety derived from a compound selected from a group consisting of poly(ethylene glycol), poly(propylene glycol), random poly(ethylene glycol-co-propylene

glycol), poly(ethylene glycol)-block-poly(propylene glycol), O,O'-bis-2-aminopropyl-(poly(propylene glycol)-b-poly(ethylene glycol-b-poly(propylene glycol) (ED 600) and poly(vinyl pyrrolidone; and

m, n, and p are integers where the value of m is between 5 and 1,800, the value of n is between 1 and 800 and the value of p is between 4 and 1,500.

41. (ORIGINAL) The method of Claim 40, wherein the copolymer is selected from a group consisting of copolymers of formulae (23), (24), (25), (26), (27), (28), (29), (30), (31), (32), (33), (34), (35), (36), (37), (38), (39), (40), (41), (42), and (43):



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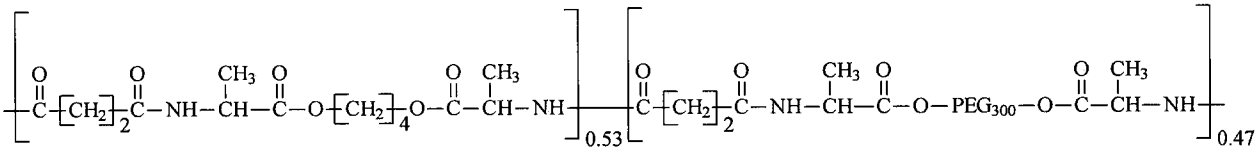

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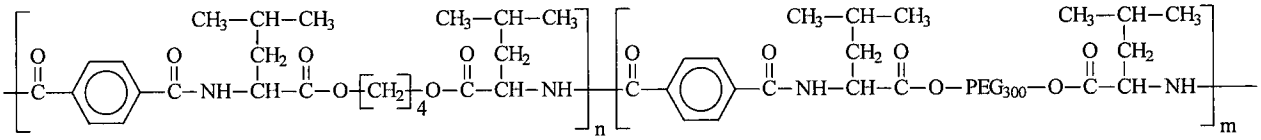

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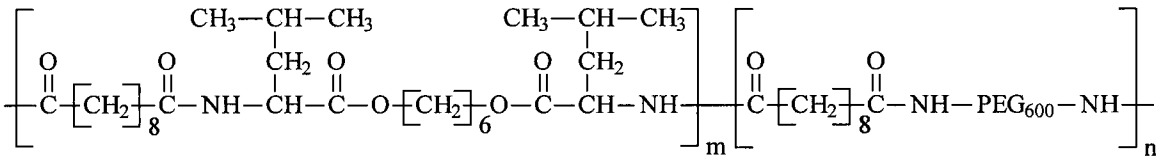

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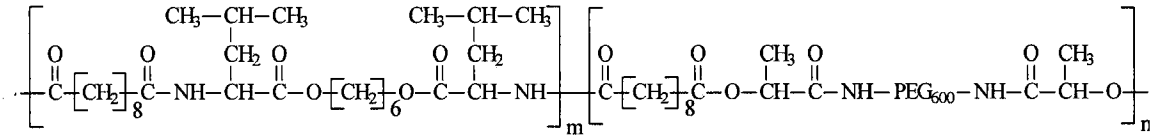

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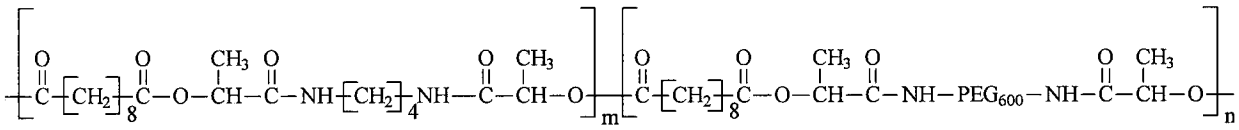

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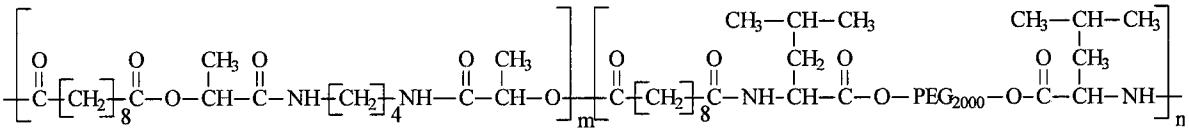

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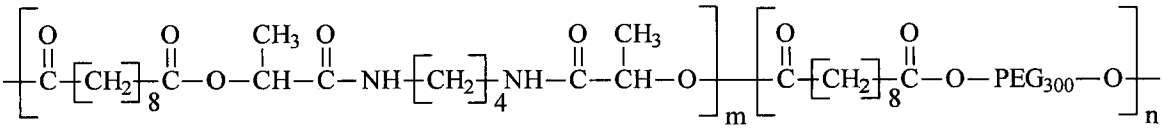

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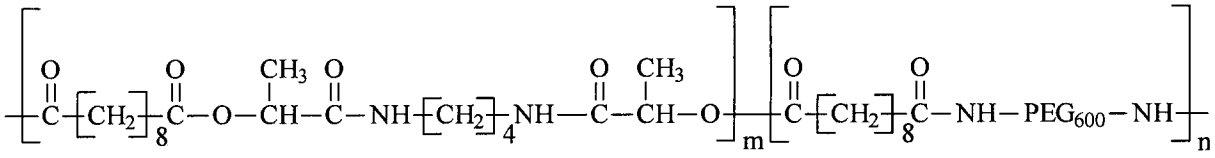

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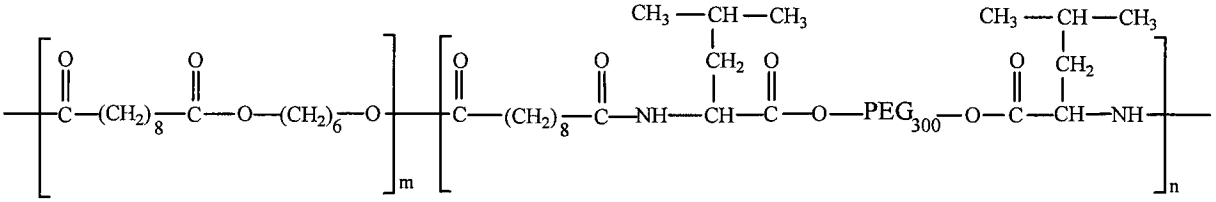

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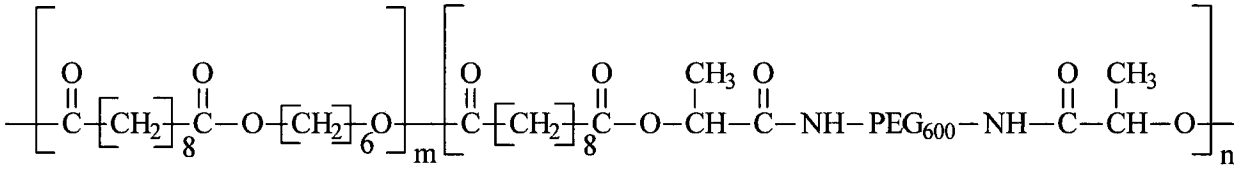

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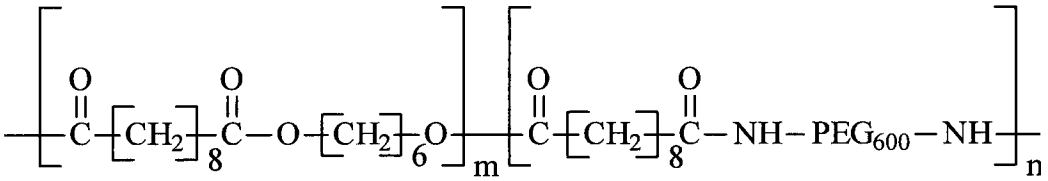

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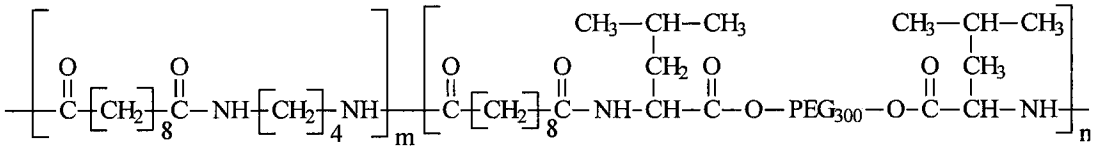

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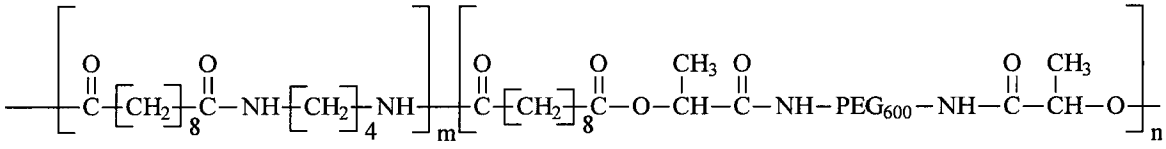

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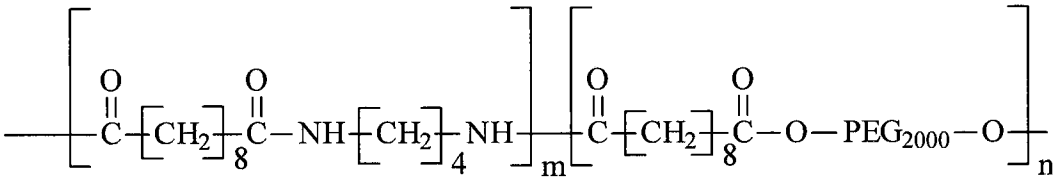

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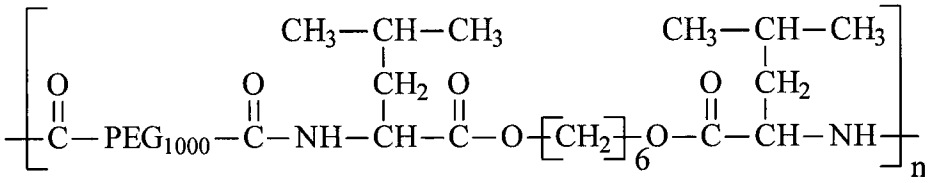

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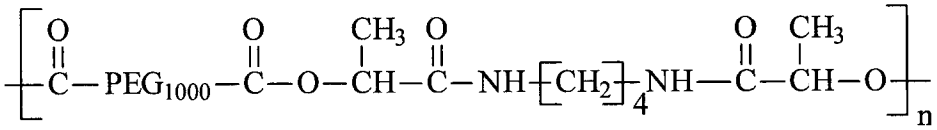

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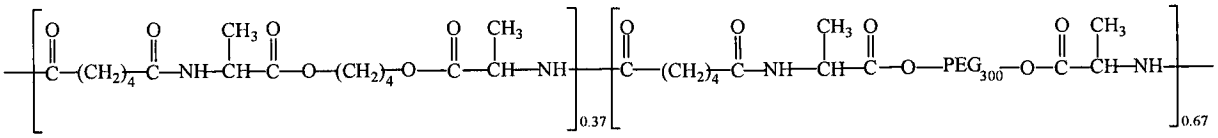

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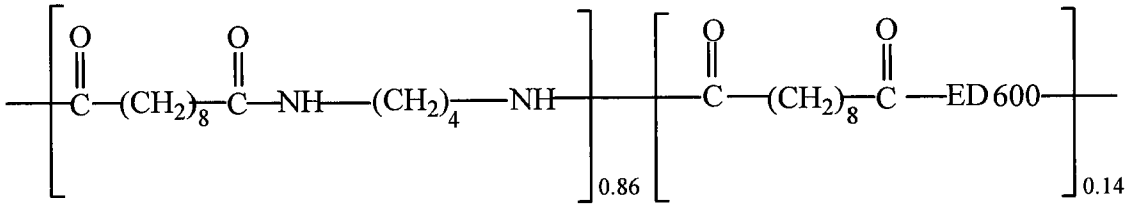

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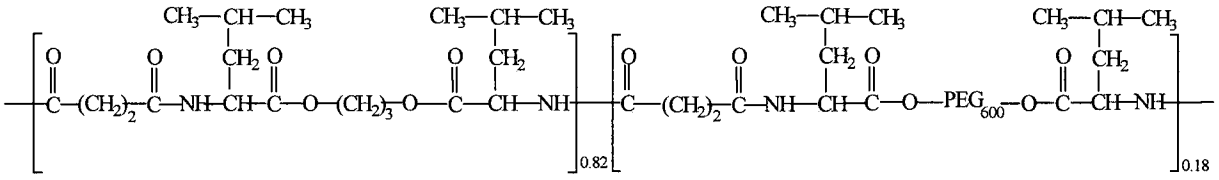

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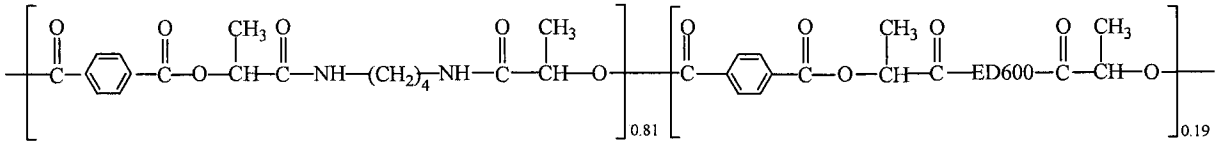

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